

**DRAFT  
AMENDMENT 1**

**to the**

**FISHERY MANAGEMENT PLAN  
for  
ATLANTIC TUNAS,  
SWORDFISH, AND SHARKS**

Includes:  
Draft Environmental Impact Statement,  
Draft Regulatory Impact Review,  
Initial Regulatory Flexibility Analysis, and  
Draft Social Impact Analysis

July 2003

Department of Commerce  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Highly Migratory Species Management Division  
1315 East-West Highway  
Silver Spring, Maryland 20910

## **Amendment 1 to the Fishery Management Plan for Atlantic Tunas, Swordfish and Sharks**

**Actions:** Amend commercial and recreational regulations regarding the shark fisheries in the Atlantic, Gulf of Mexico, and Caribbean Sea to prevent overfishing and rebuild overfished species; Update Essential Fish Habitat identifications for some species of sharks; Revise the permit system for collecting sharks for public display

**Type of Statement:** Draft Environmental Impact Statement; Draft Regulatory Impact Review; Initial Regulatory Flexibility Analysis; and Draft Social Impact Statement

**Lead Agency:** National Marine Fisheries Service

**For Further Information:** Karyl Brewster-Geisz  
Highly Migratory Species Management Division F/SF1  
1315 East-West Highway  
Silver Spring, MD 20910  
(301) 713-2347; (301) 713-1917 (fax)

**Abstract:** In 2002, the National Marine Fisheries Service (NOAA Fisheries) conducted two new stock assessments for large and small coastal sharks. These stock assessments are the best available science and, in some cases, have resulted in a change of status of some shark species. Based on these new stock assessments, NOAA Fisheries has decided that many of the shark management measures in the Fishery Management Plan for Atlantic tunas, swordfish, and sharks should be re-examined and amended, as necessary. Additionally, because of the change of status in some species, some essential fish habitat identifications need to be updated. Management measures considered in this amendment include, among other things: commercial quotas, commercial minimum sizes, recreational bag limits, recreational minimum sizes, gear restrictions to reduce bycatch or reduce bycatch mortality, time/area closures, changing the deewater/other sharks and the prohibited species management units, and updates to essential fish habitat identifications. Additionally, NOAA Fisheries is considering a different permitting system for issuing permits for display purposes. Comments on this document and the proposed rule will be accepted for 60 days from publication of the notice in the Federal Register.

## EXECUTIVE SUMMARY

Since 1997, Atlantic shark regulations have been under litigation by different interest groups including commercial fishermen, recreational fishermen, and environmental groups. As a result of these lawsuits and to comply with a settlement agreement with some commercial litigants, the National Marine Fisheries Service (NOAA Fisheries) has: (1) implemented some but not all the regulations finalized in the 1999 Fishery Management Plan for Atlantic tunas, swordfish, and sharks (HMS FMP); (2) had the 1998 large coastal shark (LCS) stock assessment peer reviewed; (3) based on the results of that peer review, decided not to base management decisions on the projections and modeling results of the 1998 LCS stock assessment; (4) managed the LCS fishery via several different emergency rules since 2001; (5) in 2002, conducted both a LCS and a small coastal shark (SCS) stock assessment; and (6) had the 2002 LCS stock assessment peer reviewed. As a result of this chain of events and because the 2002 LCS and SCS stock assessments are the best available science and, in some cases, have resulted in a change of status of some shark species, NOAA Fisheries has decided that many of the shark management measures in the Fishery Management Plan for Atlantic tunas, swordfish, and sharks should be re-examined and amended, as necessary. Additionally, because of the change of status in some species, some essential fish habitat (EFH) identifications need to be updated.

The 2002 LCS and SCS stock assessments found that: (1) the LCS complex is overfished and overfishing is occurring; (2) sandbar sharks are not overfished but overfishing is still occurring; (3) blacktip sharks are rebuilt and healthy; (4) the SCS complex, Atlantic sharpnose, bonnethead, and blacknose sharks are healthy; and (5) finetooth sharks are not overfished but overfishing is occurring. In the 1999 HMS FMP, NOAA Fisheries established a rebuilding plan for LCS. This rebuilding plan was not fully implemented. NOAA Fisheries did not establish a rebuilding plan for SCS or pelagic sharks because they were not overfished and overfishing was not occurring. This document presents a rebuilding plan that indicates that within 27 years, the LCS complex should be rebuilt to levels capable of sustaining maximum sustainable yield (MSY) on a long-term basis. This document also presents a plan of action to prevent overfishing of sandbar sharks and finetooth sharks.

NOAA Fisheries announced its intent to conduct an Environmental Impact Statement and Amendment to the HMS FMP on November 15, 2002 (67 FR 69180) and held seven scoping meetings on an Issues and Options paper in February and March 2003 (68 FR 3853). A summary of the major comments received during scoping is presented in Appendix 2 of this document. Based in part on the comments received during scoping, this document, Amendment 1 to the HMS FMP, examines numerous alternatives to revise commercial and recreational shark management measures, update, as appropriate, EFH, and update and present a plan to rebuild LCS and prevent overfishing of LCS, sandbar sharks, and finetooth sharks consistent with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the National Environmental Policy Act, the Endangered Species Act, the Marine Mammal Protection Act, the Coastal Zone Management Act, the Regulatory Flexibility Act, and other domestic laws.

This document analyzes the ecological, economic, and social impacts on numerous alternatives to rebuild the LCS complex, prevent overfishing, and minimize bycatch. The alternatives

considered in this document include (preferred alternatives are in italics):

### Commercial Management Measures

| <b>Shark Classification</b>  |  |
|--|--|
| Alternative A1<br>(No Action)  | Separate LCS groupings (Ridgeback/Non-ridgeback), different closure dates possible           |
| Alternative A2   | Separate LCS groupings (Ridgeback/Non-ridgeback), same closure date                          |
| <i>Alternative A3<br/>(Preferred)</i>  | <i>Aggregate LCS, one closure date</i>   |
| Alternative A4   | Species specific groupings, different closure dates possible                                 |
| <i>Other shark classification alternative considered but not further analyzed at this time</i> |  |
| Alternative A5   | Aggregate complex, closure occurs when quota is reached for species of highest vulnerability |
| <b>Quota Administration</b>  |  |
| Alternative B1<br>(No Action)  | Semi-annual season   |
| Alternative B2<br>(No Action)  | No regional quotas   |
| <i>Alternative B3<br/>(Preferred)</i>  | <i>Regional quotas</i>   |
| <i>Alternative B4<br/>(Preferred)</i>  | <i>Trimester season</i>  |
| Alternative B5   | Quarterly season   |
| <b>Quota Basis</b>   |  |
| Alternative C1<br>(No Action)  | Quota Basis from 1999 HMS FMP  |
| <i>Alternative C2<br/>(Preferred)</i>  | <i>Quota based upon percentage of Maximum Sustainable Yield</i>                              |
| Alternative C3   | Quota based upon average landings for past three years                                       |
| <i>Other quota basis alternative considered but not further analyzed at this time</i>          |  |
| Alternative C4   | Quota based upon maintaining constant fishing mortality over time                            |
| <b>Minimum Size</b>  |  |
| Alternative D1<br>(No Action)  | 4.5 ft for Ridgeback LCS   |
| <i>Alternative D2<br/>(Preferred)</i>  | <i>No minimum size</i>   |
| Alternative D3   | 5 ft for all LCS   |

|                |  |
|----------------|--|
| Alternative D4 | 5 ft for Ridgeback LCS; 4.5 ft for Non-ridgeback LCS                             |
| Alternative D5 | 4.5 ft for Atlantic Non-ridgeback LCS; 4 ft for Gulf of Mexico Non-ridgeback LCS |
| Alternative D6 | Minimum size for overfished species (or where overfishing is occurring) only     |

### Recreational Management Measures

| <b>Retention limits</b>               |  |
|---------------------------------------|--|
| Alternative E1<br>(No action)         | One shark per vessel per trip plus one Atlantic sharpnose shark per person per trip  |
| <i>Alternative E2<br/>(Preferred)</i> | <i>Existing catch limits (E1) plus the addition of one bonnethead shark per person per trip</i>  |
| Alternative E3                        | Existing catch limits (E1) plus the addition of one pelagic shark per vessel per trip  |
| Alternative E4                        | Existing catch limits (E1) plus an allowance for vessels with HMS Angling permits participating in registered tournaments or HMS CHB permit holders on for-hire trips to retain one shark per person, up to two sharks per vessel, per trip, as well as one bonnethead shark per person per trip |
| Alternative E5                        | Other retention limit that considers existing state recreational retention limits  |
| Alternative E6                        | No retention, catch-and-release fishing for all recreational shark fisheries, inclusive of all LCS, SCS, and pelagic sharks.   |
| Alternative E7                        | No retention limit   |
| <b>Minimum Size</b>                   |  |
| Alternative F1<br>(No Action)         | 4.5 ft FL for all sharks, no size limit for Atlantic sharpnose sharks  |
| <i>Alternative F2<br/>(Preferred)</i> | <i>Existing size limits (F1) plus a no size limit for bonnethead sharks</i>  |
| Alternative F3                        | 5.0 ft FL for all sharks, no size limit for Atlantic sharpnose and bonnethead sharks   |
| Alternative F4                        | 5.0 ft FL for all ridgeback LCS, 4.5 ft FL all non-ridgeback LCS, SCS, and pelagic sharks, no size limit for Atlantic sharpnose and bonnethead sharks  |
| Alternative F5                        | 4.5 ft FL all sharks except no size limit for Atlantic sharpnose and bonnethead sharks and regional non-ridgeback LCS minimum sizes (4.5 ft FL for all Atlantic non-ridgeback LCS, 4.0 ft FL for all Gulf of Mexico non-ridgeback LCS)   |
| Alternative F6                        | No size limit for any sharks   |
| <b>Authorized Gear</b>                |  |
| Alternative G1 (No Action)            | Any authorized gear  |
| <i>Alternative G2<br/>(Preferred)</i> | <i>Only allow handline and rod and reel in the recreational shark fishery</i>  |

## Deepwater and other sharks

|                                   |  |
|-----------------------------------|--|
| Alternative H1 (No Action)        | Retain established species group                                       |
| <i>Alternative H2 (Preferred)</i> | <i>Remove species group from management unit; data collection only</i> |

## Prohibited Species

|                                   |   |
|-----------------------------------|---|
| Alternative I1 (No Action)        | Retain established species group (19 species)   |
| Alternative I2                    | Return to the five species in 1997; white, sand tiger, bigeye sand tiger, whale, and basking shark  |
| Alternative I3                    | Retain established prohibited species group (I1) and add finetooth shark  |
| Alternative I4                    | Retain established species group (I1) and remove dusky shark  |
| Alternative I5                    | Retain established species group (I1) and add the deepwater/other species   |
| <i>Alternative I6 (Preferred)</i> | <i>Retain established prohibited species group (I1) and establish criteria for the addition and removal of species to/from the prohibited species group</i> |

## Bycatch Reduction Measures

| Gear Restrictions - Gillnet and Bottom Longline Gear Only |  |
|---|--|
| Alternative J1 (No action)                                | Gillnet - net checks, large whale take reduction plan (LWTRP), observers; Bottom longline - post guidelines  |
| Alternative J2  | Existing bycatch reduction measures (J1) plus closing the shark gillnet fishery permanently/Remove gear from list of authorized gear types   |
| <i>Alternative J3 (Preferred)</i>                         | <i>Existing bycatch reduction measures (J1) and allow only strikenet method in shark gillnet fishery</i>   |
| <i>Alternative J4 (Preferred)</i>                         | <i>Existing bycatch reduction measures (J1) plus requiring Vessel Monitoring Systems (VMS) on shark gillnet vessels during right whale calving season and requiring VMS on directed bottom longline shark fishing vessels, if there are time/area closures</i>   |
| <i>Alternative J5 (Preferred)</i>                         | <i>Existing bycatch reduction measures (J1) plus requiring the use of non-stainless steel corrodible hooks, the possession of release equipment on vessels with shark bottom longline gear (line cutters, dipnets, and, when approved, dehooking devices), and that bottom longline vessels move 1 nautical mile after an interaction with a marine mammal or a sea turtle</i> |
| Alternative J6  | Existing bycatch reduction measures (J1) plus limiting shark bottom longline gear to a maximum of 10 miles of mainline, limiting soak time to 10 hours or less, and <i>requiring the use of non-stainless steel corrodible circle hooks</i>  |
| Alternative J7  | Existing bycatch reduction measures (J1) plus requiring the retention of all sharks caught in commercial shark fisheries, no discards allowed  |
| Alternative J8  | Existing bycatch reduction measures (J1) plus requiring commercial and recreational fishermen to attend workshops in regard to both present regulations, species   |

|  |  |
|--|--|
|  | identification, and release techniques.  |
| Alternative J9   | Existing bycatch reduction measures (J1) and close all LCS when the quota for either LCS sub-group is reached                                |
| <b>Time/Area Closures</b>  |  |
| Alternative K1<br>(No Action)  | No time/area closures  |
| <i>Alternative K2<br/>(Preferred)</i>  | <i>Time/area closure for sandbar and dusky shark nursery and pupping areas off of North Carolina during the winter fishery</i>               |
| Alternative K3   | Time/area closure for all shark nursery and pupping areas during pupping season based on EFH identifications for neonate and juvenile sharks |
| <i>Other time/area closure alternatives considered but not further analyzed at this time</i> |  |
| Alternative K4   | Time/area closure for finetooth shark pupping and nursery areas in EFH identified off St. Andrews Bay, Florida                               |
| Alternative K5   | Time/area closure to protect smalltooth sawfish critical habitat   |

### Essential Fish Habitat

|                                       |   |
|---------------------------------------|---|
| Alternative L1 (No Action)            | Maintain current EFH identified areas   |
| Alternative L2                        | Identify EFH for the fishery management unit (FMU) based on the entire geographic range of the species  |
| <i>Alternative L3<br/>(Preferred)</i> | <i>Existing EFH and, as appropriate, identify EFH for the FMU for each species and life stages as those habitats necessary for spawning, breeding, feeding, or growth to maturity</i> |
| <i>Alternative L4<br/>(Preferred)</i> | <i>Existing EFH and, as appropriate, increase or decrease the EFH areas identified for individual species in the FMU based on special needs</i>                                       |

### Exempted Fishing Permits

|   |   |
|---|---|
| Alternative M1 (No Action)  | Maintain combined permitting system for scientific research, exempted fishing, and public display             |
| <i>Alternative M2<br/>(Preferred)</i>   | <i>Develop separate display permitting system for sharks, apart from research or exempted fishing permits</i> |
| <i>Other exempted fishing permit alternatives considered but not further analyzed at this time</i>                                      |   |
| NOAA Fisheries is accepting comments on several alternatives related to setting quotas for public display. See Chapter 2.7 for details. |   |

NOAA Fisheries believes that the group of preferred alternatives should, consistent with the Magnuson-Stevens Act and other domestic laws: rebuild the LCS complex; prevent overfishing of the LCS complex, sandbar sharks, and finetooth sharks; and prevent other species of sharks from becoming overfished. Comments on this document and the associated proposed rule will be accepted for 60 days from publication of the notice in the Federal Register. NOAA Fisheries

intends to finalize the regulations by January 2004.

## TABLE OF CONTENTS

|  |              |
|--|--------------|
| EXECUTIVE SUMMARY .....  | ii           |
| TABLE OF CONTENTS.....   | vii          |
| LIST OF TABLES.....  | xiv          |
| LIST OF FIGURES .....  | xviii        |
| 1.0. INTRODUCTION .....  | 1 - 1        |
| 1.1 MANAGEMENT HISTORY .....   | 1 - 1        |
| 1.1.1 The 1993 Fishery Management Plan .....   | 1 - 1        |
| 1.1.2 After the 1993 FMP .....   | 1 - 2        |
| 1.1.3 The 1996 LCS Stock Assessment and its Results.....                                 | 1 - 3        |
| 1.1.4 The 1999 Fishery Management Plan for Atlantic Tunas, Swordfish, and<br>Sharks..... | 1 - 3        |
| 1.1.5 The Peer Review of the 1998 LCS Stock Assessment .....                             | 1 - 5        |
| 1.1.6 The 2002 SCS and LCS Stock Assessments.....  | 1 - 5        |
| 1.1.7 Exempted Fishing Permits .....   | 1 - 7        |
| 1.1.8 Essential Fish Habitat .....   | 1 - 7        |
| 1.2 NEED FOR ACTION .....  | 1 - 7        |
| 1.3 OBJECTIVES .....   | 1 - 8        |
| <u>2.0 SUMMARY OF THE ALTERNATIVES .....</u>   | <u>2 - 1</u> |
| 2.1 COMMERCIAL MANAGEMENT MEASURES.....  | 2 - 1        |
| 2.1.1 Large Coastal Shark (LCS) Classification.....                                      | 2 - 1        |
| 2.1.2 Quota Administration.....  | 2 - 3        |
| 2.1.3 Quota Basis .....  | 2 - 4        |
| 2.1.4 Commercial Minimum Size.....   | 2 - 8        |
| 2.2 RECREATIONAL MANAGEMENT MEASURES .....   | 2 - 10       |
| 2.2.1 Recreational Retention Limits .....  | 2 - 10       |
| 2.2.2 Recreational Minimum Sizes.....  | 2 - 12       |
| 2.2.3 Authorized Gears for Recreational Shark Fishing .....                              | 2 - 14       |
| 2.3 DEEPWATER AND OTHER SHARKS .....   | 2 - 14       |
| 2.4 PROHIBITED SPECIES .....   | 2 - 15       |
| 2.5 BYCATCH REDUCTION MEASURES - GILLNET AND BOTTOM<br>LONGLINE GEAR ONLY .....          | 2 - 16       |
| 2.5.1 Gear Restrictions.....   | 2 - 16       |



|            |   |              |
|------------|---|--------------|
| 2.5.2      | Time/Area Closures .....  | 2 - 20       |
| 2.6        | ESSENTIAL FISH HABITAT .....  | 2 - 22       |
| 2.7        | EXEMPTED FISHING PERMIT (EFP) ADMINISTRATION.....   | 2 - 23       |
| <u>3.0</u> | <u>DESCRIPTION OF AFFECTED ENVIRONMENT .....</u>  | <u>3 - 1</u> |
| 3.1        | STATUS OF THE STOCKS .....  | 3 - 3        |
| 3.1.1      | Large Coastal Sharks (LCS) .....  | 3 - 4        |
| 3.1.2      | Small Coastal Sharks.....   | 3 - 7        |
| 3.1.3      | Pelagic Sharks .....  | 3 - 8        |
| 3.1.4      | Prohibited Shark Species.....   | 3 - 9        |
| 3.1.5      | Deepwater Sharks and Other Species.....   | 3 - 9        |
| 3.2        | FISHERY PARTICIPANTS AND GEAR TYPES.....  | 3 - 10       |
| 3.2.1      | Description of Atlantic Shark Fisheries .....   | 3 - 10       |
| 3.2.1.1    | Commercial Shark Fisheries.....   | 3 - 10       |
| 3.2.1.2    | Commercial Shark Fisheries by Gear Type .....   | 3 - 17       |
| 3.2.1.3    | Recreational Atlantic Shark Fisheries .....   | 3 - 21       |
| 3.2.2      | Economic Aspects of Shark Fisheries .....   | 3 - 24       |
| 3.2.2.1    | Fishing Costs and Revenues for Atlantic Commercial Fishermen.....                                 | 3 - 24       |
| 3.2.2.2    | Costs and Revenues for Atlantic Dealers .....   | 3 - 28       |
| 3.2.2.3    | Economics of Recreational Fisheries.....  | 3 - 29       |
| 3.2.2.4    | Willingness to Pay to Fish for Atlantic HMS.....  | 3 - 30       |
| 3.2.2.5    | Atlantic HMS Tournaments.....   | 3 - 31       |
| 3.2.2.6    | Atlantic HMS Charter and Party Boat Operations .....  | 3 - 32       |
| 3.2.2.7    | Other Recreational Fishing Costs Information .....  | 3 - 33       |
| 3.2.3      | Fish Processing, Industry, and Trade .....  | 3 - 33       |
| 3.2.3.1    | Overview of U.S. Trade Activities for HMS.....  | 3 - 34       |
| 3.2.3.2    | Shark Exports.....  | 3 - 35       |
| 3.2.3.3    | Shark Imports.....  | 3 - 36       |
| 3.3        | HABITAT .....   | 3 - 37       |
| 3.3.1      | Regulatory Requirements .....   | 3 - 38       |
| 3.3.1.1    | Description and Identification of EFH.....  | 3 - 38       |
| 3.3.1.2    | Fishing Activities That May Adversely Affect EFH .....  | 3 - 39       |
| 3.3.1.3    | Non-Fishing Activities That May Adversely Affect EFH and<br>Respective Conservation Measures..... | 3 - 39       |
| 3.3.1.4    | Cumulative Impacts Analysis.....  | 3 - 41       |
| 3.3.1.5    | Habitat Areas of Particular Concern .....   | 3 - 41       |
| 3.3.1.6    | Research and Information Needs.....   | 3 - 41       |
| 3.3.2      | Habitat Types and Distributions.....  | 3 - 42       |
| 3.3.2.1    | Atlantic Ocean .....  | 3 - 43       |
| 3.3.2.2    | Gulf of Mexico .....  | 3 - 48       |
| 3.3.2.3    | U.S. Caribbean.....   | 3 - 51       |
| 3.4        | BYCATCH, INCIDENTAL CATCH, AND PROTECTED SPECIES.....   | 3 - 54       |

|            |   |              |
|------------|---|--------------|
| 3.4.1      | Atlantic Sharks .....   | 3 - 54       |
| 3.4.2      | Other Finfish.....  | 3 - 55       |
| 3.4.3      | Marine Mammals .....  | 3 - 55       |
| 3.4.4      | Sea Turtles .....   | 3 - 57       |
| 3.4.5      | Seabirds .....  | 3 - 59       |
| 3.4.6      | Sawfish .....   | 3 - 60       |
| <b>4.0</b> | <b><u>ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES CONSIDERED</u></b> ..... | <b>4 - 1</b> |
| 4.1        | REBUILDING AND PREVENTING OVERFISHING OF ATLANTIC SHARKS.....             | 4 - 1        |
| 4.1.1      | Rebuilding Targets and Status Determination Criteria in the HMS FMP ..... | 4 - 1        |
| 4.1.2      | Large Coastal Shark Rebuilding Time Frame in the HMS FMP.....             | 4 - 2        |
| 4.1.3      | Revised Rebuilding Time Frame for Large Coastal Shark Complex ....        | 4 - 3        |
| 4.1.4      | Preventing Overfishing on Sandbar Sharks .....                            | 4 - 5        |
| 4.1.5      | Preventing Overfishing on Finetooth Sharks.....                           | 4 - 6        |
| 4.2        | COMMERCIAL MANAGEMENT MEASURES .....                                      | 4 - 6        |
| 4.2.1      | Large Coastal Shark (LCS) Classification.....                             | 4 - 7        |
| 4.2.2      | Quota Administration .....  | 4 - 9        |
| 4.2.3      | Quota Basis .....   | 4 - 12       |
| 4.2.4      | Commercial Minimum Size.....  | 4 - 16       |
| 4.3        | RECREATIONAL MANAGEMENT MEASURES.....                                     | 4 - 18       |
| 4.3.1      | Recreational Retention Limits .....                                       | 4 - 18       |
| 4.3.2      | Recreational Minimum Sizes.....   | 4 - 24       |
| 4.3.3      | Authorized Gears for Recreational Shark Fishing.....                      | 4 - 31       |
| 4.4        | DEEPWATER AND OTHER SHARKS.....   | 4 - 32       |
| 4.5        | PROHIBITED SPECIES .....  | 4 - 33       |
| 4.6        | BYCATCH REDUCTION MEASURES .....  | 4 - 36       |
| 4.6.1      | Gear Restrictions - Gillnet and Bottom Longline Gear .....                | 4 - 37       |
| 4.6.2      | Time/Area Closures .....  | 4 - 44       |
| 4.7        | ESSENTIAL FISH HABITAT .....  | 4 - 52       |
| 4.8        | EXEMPTED FISHING PERMITS (EFP) ADMINISTRATION .....                       | 4 - 54       |
| 4.9        | IMPACTS ON ESSENTIAL FISH HABITAT .....                                   | 4 - 55       |
| 4.10       | IMPACTS ON PROTECTED SPECIES.....   | 4 - 55       |
| 4.11       | ENVIRONMENTAL JUSTICE CONCERNS .....                                      | 4 - 56       |
| 4.12       | COASTAL ZONE MANAGEMENT CONCERNS .....                                    | 4 - 56       |
| 4.13       | CUMULATIVE IMPACTS.....   | 4 - 56       |
| 4.14       | COMPARISON OF THE ALTERNATIVES.....                                       | 4 - 61       |
| <b>5.0</b> | <b><u>MITIGATION AND UNAVOIDABLE ADVERSE IMPACTS</u></b> .....            | <b>5 - 1</b> |
| 5.1        | MITIGATION MEASURES .....   | 5 - 1        |
| 5.2        | UNAVOIDABLE ADVERSE IMPACTS.....  | 5 - 3        |
| 5.3        | IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES.....               | 5 - 3        |
| <b>6.0</b> | <b><u>ECONOMIC EVALUATION</u></b> .....                                   | <b>6 - 1</b> |

|         |  |        |
|---------|--|--------|
| 6.1     | NUMBER OF FISHING AND DEALER PERMIT HOLDERS .....  | 6 - 1  |
| 6.1.1   | Number of commercial permit holders and dealers .....  | 6 - 1  |
| 6.1.2   | Number of recreational permit holders .....  | 6 - 1  |
| 6.2     | GROSS REVENUES OF SHARK FISHERMEN.....   | 6 - 2  |
| 6.3     | VARIABLE COSTS, NET REVENUES, AND WILLINGNESS TO PAY.....  | 6 - 2  |
| 6.3.1   | Costs and net revenues of commercial shark fishermen .....   | 6 - 2  |
| 6.3.2   | Willingness to pay for Atlantic shark .....  | 6 - 3  |
| 6.4     | EXPECTED ECONOMIC IMPACTS OF THE COMMERCIAL<br>MANAGEMENT MEASURES .....   | 6 - 4  |
| 6.4.1   | Expected economic impacts of the LCS classification .....  | 6 - 4  |
| 6.4.2   | Expected economic impacts of the quota administration .....  | 6 - 4  |
| 6.4.3   | Expected economic impacts of the quota basis .....   | 6 - 5  |
| 6.4.3.1 | LCS quota basis .....  | 6 - 5  |
| 6.4.3.2 | SCS quota basis .....  | 6 - 6  |
| 6.4.3.3 | Pelagic shark quota basis .....  | 6 - 6  |
| 6.4.4   | Expected economic impacts of the minimum size.....   | 6 - 7  |
| 6.4.5   | Expected economic impacts of preferred commercial alternatives<br>combined.....  | 6 - 7  |
| 6.5     | EXPECTED ECONOMIC IMPACTS OF THE RECREATIONAL<br>MANAGEMENT MEASURES .....   | 6 - 7  |
| 6.5.1   | Expected economic impacts of the recreational retention limits .....   | 6 - 7  |
| 6.5.2   | Expected economic impacts of the recreational minimum sizes .....  | 6 - 8  |
| 6.5.3   | Expected economic impacts of the authorized gears for recreational shark<br>fishing .....                                    | 6 - 8  |
| 6.5.4   | Expected economic impacts of preferred recreational alternatives<br>combined.....  | 6 - 9  |
| 6.6     | EXPECTED ECONOMIC IMPACTS OF THE DEEPWATER AND OTHER<br>SHARK ALTERNATIVES .....   | 6 - 9  |
| 6.7     | EXPECTED ECONOMIC IMPACTS OF THE PROHIBITED SPECIES<br>ALTERNATIVES.....   | 6 - 9  |
| 6.8     | EXPECTED ECONOMIC IMPACTS OF THE BYCATCH REDUCTION<br>MEASURES .....   | 6 - 10 |
| 6.8.1   | Expected economic impacts of the gear restrictions for gillnet and bottom<br>longline .....                                  | 6 - 10 |
| 6.9     | EXPECTED ECONOMIC IMPACTS OF THE TIME/AREA CLOSURES ..   | 6 - 11 |
| 6.10    | EXPECTED ECONOMIC IMPACTS OF PREFERRED BYCATCH<br>REDUCTION, TIME/AREA, AND COMMERCIAL MANAGEMENT<br>MEASURES COMBINED ..... | 6 - 12 |
| 6.11    | EXPECTED ECONOMIC IMPACTS OF THE EFH .....   | 6 - 12 |
| 6.12    | EXPECTED ECONOMIC IMPACTS OF THE EFP ADMINISTRATION ..   | 6 - 12 |

## 7.0 REGULATORY IMPACT REVIEW..... 7 - 1

|            |  |              |
|------------|--|--------------|
| 7.1        | DESCRIPTION OF THE MANAGEMENT OBJECTIVES .....   | 7 - 1        |
| 7.2        | DESCRIPTION OF THE FISHERY .....   | 7 - 1        |
| 7.3        | STATEMENT OF THE PROBLEM .....   | 7 - 1        |
| 7.4        | DESCRIPTION OF EACH ALTERNATIVE.....   | 7 - 1        |
| 7.5        | ECONOMIC ANALYSIS OF EXPECTED EFFECTS OF EACH<br>ALTERNATIVE RELATIVE TO THE BASELINE .....  | 7 - 1        |
| 7.6        | CONCLUSION.....  | 7 - 2        |
| <b>8.0</b> | <b>INITIAL REGULATORY FLEXIBILITY ANALYSIS (IRFA).....</b>   | <b>8 - 1</b> |
| 8.1        | DESCRIPTION OF THE REASONS WHY ACTION IS BEING CONSIDERED  | 8 - 1        |
| 8.2        | STATEMENT OF THE OBJECTIVES OF, AND LEGAL BASIS FOR, THE<br>PROPOSED RULE.....   | 8 - 1        |
| 8.3        | DESCRIPTION AND ESTIMATE OF THE NUMBER OF SMALL ENTITIES<br>TO WHICH THE PROPOSED RULE WILL APPLY.....   | 8 - 1        |
| 8.4        | DESCRIPTION OF THE PROJECTED REPORTING, RECORD-KEEPING,<br>AND OTHER COMPLIANCE REQUIREMENTS OF THE PROPOSED RULE,<br>INCLUDING AN ESTIMATE OF THE CLASSES OF SMALL ENTITIES<br>WHICH WILL BE SUBJECT TO THE REQUIREMENTS OF THE REPORT<br>OR RECORD ..... | 8 - 2        |
| 8.5        | IDENTIFICATION OF ALL RELEVANT FEDERAL RULES WHICH MAY<br>DUPLICATE, OVERLAP, OR CONFLICT WITH THE PROPOSED RULE   | 8 - 3        |
| 8.6        | DESCRIPTION OF ANY SIGNIFICANT ALTERNATIVES TO THE<br>PROPOSED RULE THAT ACCOMPLISH THE STATED OBJECTIVES OF<br>APPLICABLE STATUTES AND THAT MINIMIZE ANY SIGNIFICANT<br>ECONOMIC IMPACT OF THE PROPOSED RULE ON SMALL ENTITIES                            | 8 - 3        |
| 8.6.1      | Commercial Management Measures.....  | 8 - 4        |
| 8.6.2      | Recreational Management Measures .....   | 8 - 5        |
| 8.6.3      | Deepwater, Other and Prohibited Shark .....  | 8 - 5        |
| 8.6.4      | Bycatch Reduction Measures.....  | 8 - 6        |
| 8.6.5      | Time/Area Closures .....   | 8 - 7        |
| 8.6.6      | Essential Fish Habitat .....   | 8 - 8        |
| 8.6.7      | Exempted Fishing Permits .....   | 8 - 8        |
| <b>9.0</b> | <b>COMMUNITY PROFILES OF ATLANTIC AND GULF COAST SHARK FISHERIES..</b>   | <b>9 - 1</b> |
| 9.1        | INTRODUCTION .....   | 9 - 1        |
| 9.2        | METHODOLOGY .....  | 9 - 2        |
| 9.3        | OVERVIEW OF THE SHARK FISHERY .....  | 9 - 3        |
| 9.4        | SHARK FISHERY PROFILES BY STATE.....   | 9 - 5        |
| 9.4.1      | Maine .....  | 9 - 5        |
| 9.4.2      | New Hampshire .....  | 9 - 6        |
| 9.4.3      | Massachusetts .....  | 9 - 7        |
| 9.4.4      | Rhode Island .....   | 9 - 8        |
| 9.4.5      | Connecticut .....  | 9 - 9        |

|          |                      |        |
|----------|----------------------|--------|
| 9.4.6    | New York.....        | 9 - 10 |
| 9.4.7    | New Jersey.....      | 9 - 11 |
| 9.4.7.1  | Barnegat Light ..... | 9 - 12 |
| 9.4.8    | Delaware.....        | 9 - 15 |
| 9.4.9    | Maryland.....        | 9 - 16 |
| 9.4.10   | Virginia .....       | 9 - 17 |
| 9.4.11   | North Carolina ..... | 9 - 18 |
| 9.4.11.1 | Hatteras .....       | 9 - 20 |
| 9.4.11.2 | Wanchese .....       | 9 - 23 |
| 9.4.12   | South Carolina ..... | 9 - 26 |
| 9.4.13   | Georgia.....         | 9 - 27 |
| 9.4.14   | Florida.....         | 9 - 28 |
| 9.4.14.1 | Pompano Beach .....  | 9 - 30 |
| 9.4.14.2 | Fort Pierce.....     | 9 - 33 |
| 9.4.14.3 | Madeira Beach .....  | 9 - 34 |
| 9.4.14.4 | Panama City .....    | 9 - 38 |
| 9.4.15   | Alabama.....         | 9 - 41 |
| 9.4.16   | Mississippi .....    | 9 - 42 |
| 9.4.17   | Louisiana.....       | 9 - 43 |
| 9.4.17.1 | Venice .....         | 9 - 44 |
| 9.4.17.2 | Dulac .....          | 9 - 48 |
| 9.4.18   | Texas.....           | 9 - 51 |

|  |         |
|--|---------|
| <a href="#"><u>10.0 ESSENTIAL FISH HABITAT</u></a> .....                 | 10 - 1  |
| 10.1 INTRODUCTION .....  | 10 - 1  |
| 10.2 EFH IDENTIFICATION PROCESS.....                                     | 10 - 2  |
| 10.2.1 Process Used for Identification of EFH for Atlantic Sharks .....  | 10 - 2  |
| 10.2.2 Methodology for Identification of EFH for Atlantic Sharks .....   | 10 - 3  |
| 10.3 LIFE HISTORY ACCOUNTS AND ESSENTIAL FISH HABITAT DESCRIPTIONS ..... | 10 - 7  |
| 10.3.1 Large Coastal Sharks .....  | 10 - 7  |
| 10.3.1.1 Requiem Sharks .....  | 10 - 7  |
| 10.3.1.1.1 <u>Blacktip shark (<i>Carcharhinus limbatus</i>)</u> .....    | 10 - 7  |
| 10.3.1.1.2 <u>Dusky shark (<i>Carcharhinus obscurus</i>)</u> .....       | 10 - 9  |
| 10.3.1.1.3 <u>Sandbar shark (<i>Carcharhinus plumbeus</i>)</u> .....     | 10 - 10 |
| 10.3.1.2 Nurse Sharks - Family <i>Ginglymostomatidae</i> .....           | 10 - 12 |
| 10.3.1.2.1 <u>Nurse shark (<i>Ginglymostoma cirratum</i>)</u> .....      | 10 - 12 |
| 10.3.2 Small Coastal Sharks .....  | 10 - 14 |
| 10.3.2.1 <u>Finetooth shark (<i>Carcharhinus isodon</i>)</u> .....       | 10 - 14 |
| 10.4 SUMMARY TABLES OF LIFE HISTORY AND HABITAT ASSOCIATIONS.....        | 10 - 16 |
| 10.5 ESSENTIAL FISH HABITAT MAPS (BY SPECIES AND LIFE STAGE).....        | 10 - 23 |
| 10.6 THREATS TO ESSENTIAL FISH HABITAT.....                              | 10 - 45 |
| 10.6.1 Fishing Activities That May Adversely Affect EFH .....            | 10 - 45 |
| 10.6.2 Non-fishing Threats to EFH .....                                  | 10 - 48 |

|                   |   |               |
|-------------------|---|---------------|
| 10.6.2.1          | Marine Sand and Minerals Mining .....   | 10 - 49       |
| 10.6.2.2          | Offshore Oil and Gas Operations.....  | 10 - 50       |
| 10.6.2.3          | Coastal Development.....  | 10 - 51       |
| 10.6.2.4          | Dredging and Disposal of Dredge Material.....   | 10 - 55       |
| 10.6.2.5          | Agriculture (and Silviculture) .....  | 10 - 56       |
| 10.6.2.6          | Aquaculture and Mariculture .....   | 10 - 58       |
| 10.6.2.7          | Navigation.....   | 10 - 59       |
| 10.6.2.8          | Marinas and Recreational Boating.....   | 10 - 60       |
| 10.6.2.9          | Ocean Dumping .....   | 10 - 62       |
| 10.6.3            | Cumulative Impacts .....  | 10 - 62       |
| 10.7              | RESEARCH AND INFORMATION NEEDS .....  | 10 - 64       |
| <u>11.0</u>       | <u>OTHER CONSIDERATIONS.....</u>  | <u>11 - 1</u> |
| 11.1              | NATIONAL STANDARDS.....   | 11 - 1        |
| 11.2              | PAPERWORK REDUCTION ACT.....  | 11 - 2        |
| 11.3              | ONGOING MANAGEMENT AND THE PROCEDURE FOR ADJUSTING<br>THE MANAGEMENT MEASURES.....                                | 11 - 7        |
| <u>12.0</u>       | <u>LIST OF PREPARERS.....</u>   | <u>12 - 1</u> |
| <u>13.0</u>       | <u>LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS CONSULTED AND TO<br/>WHOM COPIES OF THE EIS WILL BE SENT.....</u> | <u>13 - 1</u> |
| <u>Appendix 1</u> | <b>Executive Summaries of the Peer Reviews of the 2002 LCS Stock<br/>Assessment</b>                               |               |
| <u>Appendix 2</u> | <b>Scoping Summary Report</b>   |               |
| <u>Appendix 3</u> | <b>Table Outlining State Regulations</b>  |               |
| <u>Appendix 4</u> | <b>Consideration of the Scope of VMS Requirements in the Atlantic HMS<br/>Bottom Longline Fishery</b>             |               |

## LIST OF TABLES

|                                  |   |        |
|----------------------------------|---|--------|
| <a href="#"><u>Table 1.1</u></a> | <a href="#"><u>Chronological List of Most of the Federal Register Publications Relating to Atlantic Sharks.....</u></a>                               |        |
| <a href="#"><u>Table 1.2</u></a> | <a href="#"><u>List of Large Coastal Shark Seasons, 1993-2003.....</u></a>  | 1 - 13 |
| <a href="#"><u>Table 1.3</u></a> | <a href="#"><u>NOAA Fisheries' Actions Taken to Comply with the Terms of the Court-approved Settlement Agreement with SOFA <i>et al.</i>.....</u></a> | 1 - 14 |
| <a href="#"><u>Table 1.4</u></a> | <a href="#"><u>List of Management Objectives in the HMS FMP.....</u></a>  | 1 - 15 |
| Table 2.1                        | Commercial Landings of SCS by Region and Year. ....   | 2 - 26 |
| Table 2.2                        | Commercial Landings of LCS by Region and Year. ....   | 2 - 27 |
| Table 2.3                        | Process for Calculating Quota Alternatives.....   | 2 - 28 |
| Table 2.4                        | Commercial Landings (mt dw) of LCS from 1999 Through 2001. ....   | 2 - 30 |
| Table 2.5                        | Catch History of LCS, Sandbar, and Blacktip (Baseline Scenario). ....   | 2 - 30 |
| Table 2.6                        | Catch History of SCS, Atlantic Sharpnose, Blacknose, Bonnethead, and Finetooth Sharks. ....   | 2 - 31 |
| Table 2.7                        | Commercial Landings (mt dw) of SCS from 1999 Through 2001. ....   | 2 - 31 |
| Table 2.8                        | Average MSY and MSC for SCS and LCS (respectively). ....  | 2 - 32 |
| Table 3.1                        | Sharks in the Management Unit by Species Groups. ....   | 3 - 61 |
| Table 3.2                        | Summary of Catch Series Available for the 2002 LCS Stock Assessment. ...  | 3 - 62 |
| Table 3.3                        | Stock Assessment Models Utilized in 2002 LCS and SCS Stock Assessments. ....  | 3 - 63 |
| Table 3.4                        | Summary Table of the Status of the Biomass of Large Coastal Sharks. ....  | 3 - 64 |
| Table 3.5                        | Summary Table of the Status of the Fishing Mortality on Large Coastal Sharks. ...   | 3 - 65 |
| Table 3.6                        | Estimates (In Thousands of Individuals and Pounds Dressed Weight) of Total Landings for Small Coastal Sharks. ....                                    | 3 - 66 |
| Table 3.7                        | Estimates of Total Landings for Atlantic Sharpnose, Blacknose, Bonnethead, and Finetooth Sharks. ....   | 3 - 67 |
| Table 3.8                        | Summary of Catch Series Available for 2002 SCS Stock Assessment. ....   | 3 - 68 |
| Table 3.9                        | Trends in Catch Rates of Small Coastal Sharks. ....   | 3 - 69 |
| Table 3.10                       | Summary Table of the Status of the Biomass of Small Coastal Sharks. ....  | 3 - 70 |
| Table 3.11                       | Summary Table of the Status of the Fishing Mortality on Small Coastal Sharks. ....  | 3 - 71 |
| Table 3.12                       | Landings Estimates (mt) Available in the ICCAT Database for Three Shark Species, and Unclassified Sharks. ....  | 3 - 72 |
| Table 3.13                       | Summary of Available Data for Pelagic Sharks. ....  | 3 - 73 |
| Table 3.14                       | Estimates of Total Landings and Dead Discards for Large Coastal Sharks: 1981-2001 (Numbers of Fish in Thousands). ....                                | 3 - 75 |
| Table 3.15                       | Directed Bottom Longline Shark Observed Catch and Disposition for 2002, as Reported in the 2003 HMS SAFE Report (NOAA Fisheries, 2003). ....          | 3 - 76 |
| Table 3.16                       | Total Drift Gillnet Shark Catch by Species During All Observed Trips, 2002 (Outside of Right Whale Calving Season). ....                              | 3 - 78 |
| Table 3.17                       | Total Strikenet Shark Catch by Species During All Observed Trips, 2002  |        |

|            |  |        |
|------------|--|--------|
|            | (Outside of Right Whale Calving Season). ....  | 3 - 78 |
| Table 3.18 | Estimates of Recreational Catches by Shark Grouping. ....  | 3 - 79 |
| Table 3.19 | Recreational Harvest Estimates of U.S. Atlantic Large Coastal Sharks by Species for 1999, 2000, and 2001. ....   | 3 - 80 |
| Table 3.20 | Recreational Harvest Estimates of U.S. Atlantic Small Coastal Sharks by Species for 1999, 2000, and 2001. ....   | 3 - 81 |
| Table 3.22 | Average Ex-vessel Prices per lb. dw for Atlantic Sharks by Gear and Area. .  | 3 - 82 |
| Table 3.23 | Average Ex-vessel Prices per lb. For Atlantic Sharks by Area.....  | 3 - 83 |
| Table 3.24 | the Number of Plants and Employees for Atlantic Processors and Wholesalers, by State, in 1996 and 2000. ....   | 3 - 84 |
| Table 3.25 | Summary of the Mark-up and Consumer Expenditure for the Primary Wholesale and Processing of Domestic Commercial Marine Fishery Products on a Nationwide Basis: 1996 and 2001. .... | 3 - 85 |
| Table 3.26 | The Percent of Charter Boat Operators in Alabama, Louisiana, Mississippi, and Texas Who Reported Targeting HMS at Least Once. ....   | 3 - 85 |
| Table 3.27 | The Financial Operations and Economic Impact of Charter and Party Boat Operators in Alabama, Louisiana, Mississippi, and Texas. ....   | 3 - 86 |
| Table 3.28 | The Average Fees for Charter and Headboats in Florida, Georgia, South Carolina, and North Carolina. ....   | 3 - 87 |
| Table 3.29 | The Percent of Charter and Headboat Operators in Florida, Georgia, South Carolina, and North Carolina Who Reported Targeting HMS at Least Once. ....                               | 3 - 87 |
| Table 3.30 | The Financial Operations and Economic Impact of Charter and Party Boat Operators in Florida, Georgia, South Carolina, and North Carolina. ....                                     | 3 - 88 |
| Table 3.31 | 1997-2002 U.S. Exports of Shark Products (kg).....   | 3 - 89 |
| Table 3.32 | 1997-2002 U.S. Imports of Shark Products. ....   | 3 - 89 |
| Table 3.33 | Total Teleost and Ray Bycatch in NOAA Fisheries Observed Drift Gillnet Sets During 2002 Right Whale Season. ....   | 3 - 90 |
| Table 3.34 | Total Bycatch in NOAA Fisheries Observed Drift Gillnet Sets Outside of 2002 Right Whale Calving Seasons. ....  | 3 - 91 |
| Table 3.35 | Total Bycatch in NOAA Fisheries Observed Strikenet Sets During 2002 Right Whale Season. ....   | 3 - 92 |
| Table 3.36 | Status of Atlantic sea turtle populations: Species taken in HMS fisheries 1992-1997. ....  | 3 - 92 |
| Table 3.37 | Annual estimates of total marine turtle bycatch and the subset that were dead when released in the U.S. pelagic longline fishery. ....   | 3 - 93 |
| Table 3.38 | Seabird Bycatch in the Atlantic Pelagic Longline Fishery from 1992 to 2002. ....   | 3 - 94 |
| Table 4.1  | Summary of Shark Pupping Seasons for Some Species. ....  | 4 - 63 |
| Table 4.2  | Percent Change in Catch of Dusky, Sandbar, and LCS Complex under Different Scenarios with and Without Redistribution of Effort. ....   | 4 - 64 |
| Table 4.3  | Example of Temporal Variations in Effectiveness of Closing Area on Dusky Shark Catches. ....   | 4 - 65 |
| Table 4.4  | Example of Temporal Variations in Effectiveness of Closing Area on Sandbar Shark Catches. ....   | 4 - 66 |



|            |   |         |
|------------|---|---------|
| Table 4.5  | Example of Temporal Variations in Effectiveness of Closing Area LCS Complex.  | 4 - 67  |
| Table 4.6  | Redistribution of Fishing Effort for Dusky Sharks in the Time/Area Closure Alternative for Years 1994-2003.             | 4 - 68  |
| Table 4.7  | Redistribution of Fishing Effort for Dusky Sharks in the Time/Area Closure Alternative for Years 2000-2003.             | 4 - 69  |
| Table 4.8  | Redistribution of Fishing Effort for Sandbar Sharks in the Time/Area Closure Alternative for Years 1994-2003.           | 4 - 70  |
| Table 4.9  | Redistribution of Fishing Effort for LCS in the Time/Area Closure Alternative for Years 1994-2003.                      | 4 - 71  |
| Table 4.10 | Redistribution of Fishing Effort for LCS in the Time/Area Closure Alternative for Years 2000-2003.                      | 4 - 72  |
| Table 4.11 | List of LCS Species Caught Inside and Outside the Proposed Time/Area Closure.   | 4 - 73  |
| Table 4.12 | Impacts of Alternatives Considered.   | 4 - 74  |
| Table 4.13 | Comparison of the Alternatives Considered   | 4 - 75  |
| Table 6.1  | The Number of Atlantic Shark Permit Holders.  | 6 - 14  |
| Table 6.2  | The Number of Operating Shark Gillnet Vessels.  | 6 - 14  |
| Table 6.3  | Estimates of the Total Ex-vessel Value Gross Revenues of Atlantic Shark Fisheries as Presented in the 2003 SAFE Report. | 6 - 15  |
| Table 6.4  | Economic Impacts of LCS Quota Alternatives Considered   | 6 - 16  |
| Table 6.5  | Economic Impacts of SCS Quota Alternatives Considered   | 6 - 16  |
| Table 7.1  | Summary of the net benefits and costs for each alternative  | 7 - 2   |
| Table 9.1  | 2001: Commercial Landings, Dealers and Vessel Permits in the Shark Fishery, by State                                    | 9 - 52  |
| Table 9.1a | Number of Charter and Head Boats with HMS Permits, by State, 2003   | 9 - 53  |
| Table 9.2  | 2001 Commercial Fishery Landings in Maine   | 9 - 53  |
| Table 9.3  | 2001 Commercial Fishery Landings in New Hampshire   | 9 - 54  |
| Table 9.4  | 2001 Commercial Fishery Landings in Massachusetts   | 9 - 54  |
| Table 9.5  | 2001 Commercial Fishery Landings in Rhode Island  | 9 - 54  |
| Table 9.6  | 2001 Commercial Fishery Landings in Connecticut   | 9 - 55  |
| Table 9.7  | 2001 Commercial Fishery Landings in New York  | 9 - 55  |
| Table 9.8  | 2001 Commercial Fishery Landings in New Jersey  | 9 - 55  |
| Table 9.9  | 2001 Commercial Fishery Landings in Maryland  | 9 - 56  |
| Table 9.10 | 2001 Commercial Fishery Landings in Virginia  | 9 - 56  |
| Table 9.11 | 2001 Commercial Fisheries Landings in North Carolina  | 9 - 56  |
| Table 9.12 | 2001 Commercial Fisheries Landings in South Carolina  | 9 - 56  |
| Table 9.13 | 2001 Commercial Fishery Landings in Georgia   | 9 - 57  |
| Table 9.14 | 2001 Commercial Fishery Landings in Florida   | 9 - 57  |
| Table 9.15 | 2001 Commercial Fishery Landings in East Coast, Florida, Ports  | 9 - 57  |
| Table 9.16 | 2001 Commercial Fishery Landings in West Coast, Florida, Ports  | 9 - 58  |
| Table 9.17 | 2001 Commercial Fishery Landings in Alabama   | 9 - 58  |
| Table 9.18 | 2001 Commercial Fishery Landings in Mississippi   | 9 - 58  |
| Table 9.19 | 2001 Commercial Fishery Landings in Louisiana   | 9 - 58  |
| Table 9.20 | 2001 Commercial Fishery Landings in Texas   | 9 - 59  |
| Table 10.7 | List of Data Sources and Contacts Used to Update EFH Information  | 10 - 66 |



## LIST OF FIGURES

|            |  |         |
|------------|--|---------|
| Figure 3.1 | Large Coastal Shark Complex CPUE Series: A) 1974-2001, B) 1993-2001, C) 1998-2001. ....  | 3 - 96  |
| Figure 3.2 | Sandbar Shark CPUE Series: A) 1974-2001, B) 1993-2001, C) 1998-2001. ....  | 3 - 97  |
| Figure 3.3 | Blacktip Shark CPUE Series: A) 1974-2001, B) 1993-2001, C) 1998-2001. ....   | 3 - 98  |
| Figure 3.4 | Age-specific CPUE Series for the Sandbar Shark: A) Juveniles (Ages 0-12), B) Adults (Ages 13 and Older), C) All Ages Combined. ....  | 3 - 99  |
| Figure 3.5 | Age-specific CPUE Series for the Blacktip Shark: A) Juveniles (Ages 0-5), B) Adults (Ages 6 and Older), C) All Ages Combined. ....   | 3 - 100 |
| Figure 3.6 | Summary Plot for Large Coastal Shark Complex of the Mean Probability That $B > B_{MSY}$ Obtained in Six Main Scenarios Using the Bayesian SPM with the SIR Algorithm. ....   | 3 - 101 |
| Figure 3.7 | Summary Plot for Sandbar Shark of the Mean Probability That $B > B_{MSY}$ Obtained in Five Main Scenarios Using the Bayesian SPM with the SIR Algorithm and Five Main Scenarios Using the ASPM Model. ....                 | 3 - 101 |
| Figure 3.8 | Summary Plot for Blacktip Shark of the Mean Probability That $B > B_{MSY}$ Obtained in Five Main Scenarios Using the Bayesian SPM with the SIR Algorithm and Four Main Scenarios Using the ASPM Model. ....                | 3 - 102 |
| Figure 4.1 | Proposed Time/Area Closure off of Virginia, North Carolina, and South Carolina Showing Observed Dusky Shark Catches from 1994-2003. Northern Boundary 37°30'n, Eastern Boundary: 74°15'w, Southern Boundary 33°0.0'n. .... | 4 - 84  |
| Figure 4.2 | Close-up View of Proposed Time/Area Closure off of Virginia, North Carolina, and South Carolina Showing Observed Dusky Shark Catches from 1994-2003, and HAPC Areas. ....  | 4 - 85  |
| Figure 4.3 | Proposed Time/Area Closure Showing Observed Catches of Sandbar Sharks from 1994-2002. ....   | 4 - 86  |

## **1.0. INTRODUCTION**

### **1.1 MANAGEMENT HISTORY**

Sharks have been managed by the Secretary of Commerce since 1993. Below is a brief summary of management actions and issues. Table 1.1 provides a list of most Atlantic shark related management actions published in the Federal Register. Table 1.2 provides a list of season opening and closing dates for large coastal sharks (LCS).

#### **1.1.1 The 1993 Fishery Management Plan**

In 1989, the five Atlantic Fishery Management Councils asked the Secretary of Commerce to develop a Shark Fishery Management Plan (FMP). The Councils were concerned about the late maturity and low fecundity of sharks, the increase in fishing mortality, and the possibility of the resource being overfished. The Councils requested that the FMP cap commercial fishing effort, establish a recreational bag limit, prohibit "finning," and begin a data collection system.

In 1993, the Secretary of Commerce, through the National Marine Fisheries Service (NOAA Fisheries), implemented the FMP for Sharks of the Atlantic Ocean. The management measures in 1993 FMP included:

- Establishing a fishery management unit (FMU) containing 39 frequently caught species of Atlantic sharks, separated into three groups for assessment and regulatory purposes (LCS, small coastal sharks (SCS), and pelagic sharks);
- Establishing calendar year commercial quotas for the LCS and pelagic sharks and dividing the annual quota into two equal half-year quotas that apply to the following two fishing periods--January 1 through June 30 and July 1 through December 31;
- Establishing a recreational trip limit of four sharks per vessel for large coastal or pelagic species groups and a daily bag limit of five sharks per person for sharks in the small coastal species group;
- Requiring that all sharks not taken as part of a commercial or recreational fishery be release uninjured;
- Establishing a framework procedure for adjusting commercial quotas, recreational bag limits, species size limits, management unit, fishing year, species groups, estimates of maximum sustainable yield, and permitting and reporting requirements;
- Prohibiting finning by requiring that the ratio between wet fins/dressed carcass weight not exceed 5 percent;
- Prohibiting the sale by recreational fishermen of sharks or shark products caught in the Economic Exclusive Zone (EEZ);
- Requiring annual commercial permits for fishermen who harvest and sell shark (meat products and fins);
- Establishing a permit eligibility requirement that the owner or operator (including charter vessel and headboat owners/operators who intend to sell their catch) must show proof that at least 50 percent of earned income has been derived from sale of the fish or fish products or charter vessel and headboat operations or at least \$20,000 from the sale of fish during one of three years preceding the permit request;

- Requiring trip reports by permitted fishermen and persons conducting shark tournaments and requiring fishermen to provide information to NOAA Fisheries under the Trip Interview Program; and,
- Requiring NOAA Fisheries observers on selected shark fishing vessels to document mortality of marine mammals and endangered species.

At that time, NOAA Fisheries identified LCS as overfished and pelagic and SCS as fully fished. The quotas were 2,436 metric tons (mt) dressed weight (dw) for LCS and 580 mt dw for pelagic sharks. No quota was established for SCS. Under the rebuilding plan established in the 1993 FMP, the LCS quota was expected to increase every year until the maximum sustainable yield (MSY) estimated in the 1992 stock assessment was attained.

### **1.1.2 After the 1993 FMP**

A number of difficulties arose in the initial year of implementation of the shark FMP. First, the January-June bi-annual large coastal species group subquota was exceeded shortly after implementation of the FMP, and that portion of the commercial fishery was closed on May 10, 1993. The large coastal fishery re-opened on July 1, 1993, with an adjusted quota of 875 mt dw. Derby-style fishing, coupled with what some participants observed to be an unusual abundance of sharks, led to an intense and short fishing season for LCS, with the fishery closing within one month. Although fin prices remained strong throughout the brief season, the oversupply of shark carcasses led to reports of record low prices. The closure was significantly earlier than expected, and a number of commercial fishermen and dealers indicated that they were adversely affected. The intense season also complicated the task of monitoring the LCS quota and closing the season with the required advance notice.

To address these problems, a commercial trip limit of 4000 lb. for permitted vessels for LCS was implemented on December 28, 1993 (58 FR 68556), and a control date for the Atlantic shark fishery was established on February 22, 1994 (59 FR 8457). A final rule to implement additional measures authorized by the FMP was published on October 18, 1994 (59 FR 52453). This rule:

- Clarified operation of vessels with a Federal commercial permit;
- Established the fishing year;
- Consolidated the regulations for drift gillnets;
- Required dealers to obtain a permit to purchase sharks;
- Required dealer reports;
- Established recreational bag limits;
- Established quotas for commercial landings; and,
- Provided for commercial fishery closures when quotas are reached.

In 1994, under the rebuilding plan implemented in the 1993 FMP, the LCS quota was increased to 2,570 mt dw. Additionally, a new stock assessment was completed in March 1994. This stock assessment focused on LCS, suggested that recovery to the levels of the 1970s could take as long as 30 years, and concluded that "increases in the [Total Allowable Catch (TAC)] for sharks [are] considered risk-prone with respect to promoting stock recovery." Additionally, declining catch-per-unit-effort (CPUE) and life history characteristics indicated low productivity for pelagic and small coastal sharks and suggested a prudent approach for those species as well.

A final rule that capped quotas for LCS and pelagic sharks at the 1994 levels was published on May 2, 1995 (60 FR 21468).

### **1.1.3 The 1996 LCS Stock Assessment and its Results**

In June 1996, NOAA Fisheries convened another stock assessment to examine the status of LCS stocks. The 1996 stock assessment found no clear evidence that LCS stocks were rebuilding and concluded that “[a]nalyzes indicate that recovery is more likely to occur with reductions in effective fishing mortality rate of 50 [percent] or more.” In response to these results, in 1997, NOAA Fisheries reduced the LCS commercial quota by 50 percent to 1,285 metric tons (mt) dressed weight (dw) and the recreational retention limit to two LCS, SCS, and pelagic sharks combined per trip with an additional allowance of two Atlantic sharpnose sharks per person per trip (62 FR 16648, April 2, 1997). In this same rule, NOAA Fisheries established an annual commercial quota for SCS of 1,760 mt dw and prohibited possession of five species. On May 2, 1997, the Southern Offshore Fishing Association (SOFA) and other commercial fishermen and dealers sued the Secretary of Commerce (Secretary) on the April 1997 regulations.

On February 26, 1998, Judge Steven D. Merryday of the U.S. District Court for the Middle District of Florida issued an order in the SOFA case, finding that the Secretary “failed to conduct a proper analysis to determine the [April 1997 LCS] quota’s economic effect on small businesses” and directing NOAA Fisheries “to undertake a rational consideration of the economic effects and potential alternatives to the 1997 [LCS] quotas” on small businesses engaged in the Atlantic shark commercial fishery. Judge Merryday allowed NOAA Fisheries to maintain the 1997 quotas pending further order of the court.

In May 1998, NOAA Fisheries completed its consideration of the economic effects of the 1997 LCS quotas on fishermen and submitted the analyses to the court. NOAA Fisheries concluded that 1997 LCS quotas may have had a significant economic impact on a substantial number of small entities and that there were no other available alternatives that would both mitigate those economic impacts and ensure the viability of the LCS stocks.

### **1.1.4 The 1999 Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks**

In 1996, amendments to the Magnuson-Stevens Act modified the definition of overfishing and established new provisions to halt overfishing and rebuild overfished stocks, minimize bycatch and bycatch mortality to the extent practicable, and identify and protect essential fish habitat. Accordingly, in 1997, NOAA Fisheries began the process of creating a rebuilding plan for overfished highly migratory species (HMS), including LCS, consistent with the new provisions.

In June 1998, NOAA Fisheries held another LCS stock assessment. The 1998 stock assessment found that LCS were overfished and would not rebuild under 1997 harvest levels. Based in part on the results of the 1998 stock assessment, in April 1999, NOAA Fisheries published the final Fishery Management Plan for Atlantic Tunas, Swordfish and Sharks (“Highly Migratory Species” or HMS FMP), which included numerous measures to rebuild or prevent overfishing of Atlantic sharks in commercial and recreational fisheries. The HMS FMP replaced the 1993 FMP. Management measures related to sharks that changed in the HMS FMP included:

- Reducing commercial LCS and SCS quotas;
- Establishing ridgeback and non-ridgeback subgroups of LCS;
- Implementing a commercial minimum size for ridgeback LCS;
- Establishing blue shark, porbeagle shark, and other pelagic shark subgroups of the pelagic sharks and establishing a commercial quota for each subgroup;
- Reducing recreational retention limits for all sharks;
- Establishing a recreational minimum size for all sharks except Atlantic sharpnose;
- Expanding the list of prohibited shark species;
- Implementing limited access in commercial fisheries;
- Establishing a shark public display quota;
- Establishing new procedures for counting dead discards and state landings of sharks after Federal fishing season closures against Federal quotas; and,
- Establishing season-specific over- and under-harvest adjustment procedures.

The implementing regulations were published on May 28, 1999 (64 FR 29090). On June 25, 1999, SOFA *et al.* sued NOAA Fisheries again, this time challenging the Atlantic shark commercial measures implemented in the HMS FMP. Around this time, NOAA Fisheries was also sued by Bluewater Fisherman's Association regarding the pelagic shark management measures adopted in the HMS FMP and by the Recreational Fishing Alliance regarding the recreational shark regulations adopted in the HMS FMP.

On June 30, 1999, NOAA Fisheries received a court order from Judge Merryday relative to the May 1997 lawsuit. Specifically, the order enjoined NOAA Fisheries from enforcing the 1999 regulations with respect to Atlantic shark commercial catch quotas and fish-counting methods (including the counting of dead discards and state commercial landings after Federal closures), which were different from the quotas and fish counting methods prescribed by the 1997 Atlantic shark regulations. A year later, on June 12, 2000, the court issued an order clarifying that NOAA Fisheries could proceed with implementation and enforcement of the 1999 prohibited species provisions (64 FR 29090, May 28, 1999).

On September 25, 2000, Judge Roberts of the United States District Court for the District of Columbia dismissed the Bluewater Fisherman's Association case and stated that the regulations were consistent with the Magnuson-Stevens Act and the Regulatory Flexibility Act. On September 20, 2001, Judge Roberts dismissed the Recreational Fishing Alliance case and stated that the recreational retention limits are consistent with the Magnuson-Stevens Act.

On November 21, 2000, SOFA *et al.* and NOAA Fisheries reached a settlement agreement for the May 1997 and June 1999 lawsuits. On December 7, 2000, Judge Merryday entered an order approving the settlement agreement and lifting the injunction. The settlement agreement required, among other things, an independent (i.e., non-NOAA Fisheries) review of the 1998 LCS stock assessment (Table 1.3). The settlement agreement did not address any regulations affecting the pelagic shark, prohibited species, or recreational shark fisheries. Once the injunction was lifted, on January 1, 2001, the pelagic shark quotas adopted in the HMS FMP were implemented (66 FR 55). Additionally, on March 6, 2001, NOAA Fisheries published an emergency rule implementing the settlement agreement (66 FR 13441). This emergency rule expired on September 4, 2001, and established the LCS and SCS commercial quotas at 1997 levels.

### **1.1.5 The Peer Review of the 1998 LCS Stock Assessment**

As noted above, the settlement agreement required, among other things, an independent review of the 1998 LCS stock assessment. The original settlement agreement determined that the Center for Independent Experts (CIE) would conduct the peer review. In May 2001, the CIE transmitted three peer reviews of the 1998 LCS stock assessment to NOAA Fisheries. Upon examination, NOAA Fisheries determined that the three CIE peer reviews did not conform to the terms of the settlement agreement, and therefore, were not complete.

Due to these irregularities, in July 2001, NOAA Fisheries and the plaintiffs revised certain sections of the settlement agreement and included a provision that stated that Natural Resources Consultants, Inc. (NRC) would conduct a second peer review. NOAA Fisheries received the results of the complete NRC peer reviews in October, 2001. Three of the four NRC reviewers found that the scientific conclusions and scientific management recommendations contained in the 1998 Stock assessment report *were not* based on scientifically reasonable uses of appropriate fisheries stock assessment techniques and the best available biological fishery information relating to LCS. The settlement agreement stated that in this case, NOAA Fisheries will take the appropriate action to maintain the 1997 LCS quota and catch accounting/monitoring procedures, pending a new LCS stock assessment.

Taking into consideration the settlement agreement, the results of all the peer reviews, current catch rates, and the best available scientific information (not including the 1998 stock assessment projections), NOAA Fisheries implemented another emergency rule for the 2002 fishing year that suspended certain measures under the 1999 regulations pending completion of new LCS and SCS stock assessments and a peer review of the new LCS stock assessment (66 FR 67118, December 28, 2001; extended 67 FR 37354, May 29, 2002). Specifically, NOAA Fisheries maintained the 1997 LCS commercial quota (1,285 mt dw), maintained the 1997 SCS commercial quota (1,760 mt dw), suspended the commercial ridgeback LCS minimum size, suspended counting dead discards and state landings after a Federal closure against the quota, and replaced season-specific quota accounting methods with subsequent-season quota accounting methods. That emergency rule expired on December 30, 2002.

### **1.1.6 The 2002 SCS and LCS Stock Assessments**

On May 8, 2002, NOAA Fisheries announced the availability of the first SCS stock assessment since 1992 (67 FR 30879). The Mote Marine Laboratory and the University of Florida provided NOAA Fisheries with another SCS assessment in August 2002. Both of these stock assessments indicate that overfishing is occurring on finetooth sharks. The three other species in the SCS complex (Atlantic sharpnose, bonnethead, and blacknose) are not overfished and overfishing is not occurring. Because management of SCS and LCS is interrelated, NOAA Fisheries commenced SCS rulemaking when the 2002 LCS stock assessment was complete. On May 28, 2002 (67 FR 36858), NOAA Fisheries announced the availability of a modeling document that explored the suggestions of the CIE and NRC peer reviews on LCS. At this time, NOAA Fisheries also announced the dates of a 2002 LCS stock assessment workshop that was held in June 2002. On October 17, 2002, NOAA Fisheries announced the availability of the 2002 LCS stock assessment and the workshop meeting report (67 FR 64098). The results of this



stock assessment indicate that the LCS complex is still overfished and overfishing is occurring. Additionally, the 2002 LCS stock assessment found that sandbar sharks are no longer overfished but that overfishing is still occurring and that blacktip sharks are rebuilt and overfishing is not occurring.

Based on the results of both the 2002 SCS and LCS stock assessments, NOAA Fisheries implemented an emergency rule to ensure that the commercial management measures in place for the 2003 fishing year were based on the best available science (December 27, 2002, 67 FR 78990; extended May 29, 2003, 68 FR 31987). Specifically, the emergency rule implemented the LCS ridgeback/non-ridgeback split, set the LCS and SCS quotas based on the results of stock assessments, suspended the commercial ridgeback LCS minimum size, and allowed both the season-specific quota adjustments and the counting of all mortality measures to go into place. Additionally, NOAA Fisheries announced its intent to conduct an environmental impact statement and amend the HMS FMP (November 15, 2002, 67 FR 69180).

The emergency rule was intended as an interim measure to maintain the status of LCS and SCS pending the re-evaluation of management measures in the context of the rebuilding plan through this FMP amendment. The emergency rule for the 2003 fishing year implemented for the first time the classification system (ridgeback/non-ridgeback LCS) finalized in the HMS FMP. NOAA Fisheries also implemented for the first time a provision to count state landings after a Federal closure and counting dead discards against the quota. To calculate the commercial quotas for these groups, NOAA Fisheries took the average landings for individual species from 1999 through 2001 and either increased them or decreased them, as suggested by the stock assessment. Because the stock assessment suggested an increase in catch for blacktip sharks and no decrease in catch for sandbar sharks (the two primary species in the LCS fishery), this method resulted in an increase in the overall quota for the length of the emergency rule. During the comment period on the emergency rule and scoping for this amendment, NOAA Fisheries received comments regarding, among other things, the quota levels under the rule, concern over secondary species and discards, the ability of fishermen to target certain species, and impacts of the different season length for ridgeback and non-ridgeback LCS. NOAA Fisheries responded to these comments when extending the emergency rule and further considered these comments when examining the alternatives presented in this document.

NOAA Fisheries received the results of the peer review of the 2002 LCS stock assessment in December 2002. Unlike the peer reviews of the 1998 LCS stock assessment, these reviews were generally positive (Appendix 1).

NOAA Fisheries held seven scoping meetings regarding an amendment to the HMS FMP in February and March 2003 (68 FR 3853, January 27, 2003). The alternatives and potential impacts considered in this document are based in part on the comments received during scoping (Appendix 2) and on the results of the 2002 SCS and LCS stock assessments.

#### **1.1.7 Exempted Fishing Permits**

Under 50 CFR 635.32, and consistent with 50 CFR 600.745, NOAA Fisheries may authorize for limited testing, public display, and scientific data collection purposes, the target or incidental harvest of species managed under an FMP or fishery regulations that would otherwise be prohibited. Exempted fishing may not be conducted unless authorized by an Exempted Fishing

Permit (EFP) or a Scientific Research Permit (SRP) issued by NOAA Fisheries in accordance with criteria and procedures specified in those sections. As necessary, an EFP or SRP would exempt the named party(ies) from otherwise applicable regulations under 50 CFR part 635. Such exemptions could address fishery closures, possession of prohibited species, commercial permitting requirements, and retention and minimum size limits.

In the HMS FMP, NOAA Fisheries established a 60 mt ww shark public display quota for the purpose of collecting sharks for aquariums and other instances of public display. In order to collect sharks under this quota, fishermen must apply for an EFP. This allows them to collect sharks during closed seasons and also allows them to collect sharks that may be prohibited, such as sand tiger sharks. NOAA Fisheries also issues EFPs for the collection of other HMS for public display. This amendment proposes a different permit system for fishermen who intend to collect sharks for public display. EFPs in general will be considered in a different amendment to the HMS FMP.

### **1.1.8 Essential Fish Habitat**

Under the Magnuson-Stevens Act, each FMP must describe and identify essential fish habitat (EFH) for the fishery, minimize to the extent practicable adverse effects on that EFH caused by fishing, and identify other actions to encourage the conservation and enhancement of EFH. In 1999, NOAA Fisheries identified EFH for all actively managed species of sharks as well as two habitat areas of concern. NOAA Fisheries now has two new stock assessments for SCS and LCS. These stock assessments contain new information that warrant NOAA Fisheries' consideration of possible updates to EFH, particularly for species whose status has changed. This amendment considers these updates to EFH identifications for these species of sharks. Additionally, under 50 CFR Part 600, NOAA Fisheries must review all identified EFH areas every five years (January 17, 2002, 67 FR 2343). NOAA Fisheries is planning to begin to conduct this five year review for all HMS within the next year.

## **1.2 NEED FOR ACTION**

An amendment to the HMS FMP regarding shark management and the issuance of EFPs/SRPs is needed for a number of reasons:

- After reviewing all peer reviews of the 1998 LCS stock assessment, in the December 2001 emergency rule, NOAA Fisheries determined that the projections of the models used in the 1998 LCS stock assessment no longer constitute the best available science. Thus, a number of management measures in the 1999 HMS FMP are no longer appropriate. Currently, NOAA Fisheries is implementing a number of commercial regulations for the 2003 fishing year via an emergency rule. With no other action, once this rule expires, management measures that are not based on the best available science would go into place.
- The 2002 SCS and LCS stock assessments indicate that the status of some species has changed. While the HMS FMP did include a framework process that would allow for changes in commercial quotas and recreational bag limits without an FMP amendment, any regulatory adjustment under this process would have to have been contemplated in

the original FMP. Many of the actions under consideration now were not considered in the HMS FMP. For example, the quotas for non-ridgeback LCS were based on the assumption that blacktip sharks were overfished and needed a large reduction in fishing mortality. The 2002 LCS stock assessment shows that blacktip sharks are fully rebuilt and can withstand a 20 to 50 percent increase in catch. The HMS FMP did not consider this possibility so any long-term changes to the non-ridgeback LCS quota must be done through an amendment.

- Additionally, management measures of all species groups and commercial and recreational fisheries are interconnected and changing one management measure could affect the expected results from another management measure. Thus, to some extent, NOAA Fisheries is reviewing overall management measures for sharks.
- Since establishing the 60 mt ww shark display quota in the HMS FMP, NOAA Fisheries has received a number of comments that suggest the collection of any HMS for public display could be improved through its own permit system rather than with EFPs. These types of changes were not considered in the HMS FMP.

### **1.3 OBJECTIVES**

The objectives of this amendment fully incorporate all the objectives of the HMS FMP (Table 1.4) and also include:

- To clarify the type of permit needed for obtaining sharks for the purpose of public display.
- To establish criteria via a framework process and criteria for changing the shark commercial and recreational management measures without an FMP amendment consistent with the best available science, the objectives of the HMS FMP, the Magnuson-Stevens Act, and other domestic laws. Such framework criteria could include, but are not limited to, changes to the commercial quota, the recreational bag limit, time/area closures, and additions or removals to the prohibited species list.
- To update, as necessary, the rebuilding plan for LCS.
- To establish the criteria that are used to change or modify HMS EFH identifications for the FMU.
- To update EFH information and identifications, as necessary, based on the 2002 SCS and LCS stock assessments.

Due to time constraints (i.e., the need for new regulations by the January 1 opening of the season), this amendment will not address all issues in the shark fisheries or even all the issues presented in the issues and options paper presented during scoping. However, this amendment should address some of the more pressing matters such as commercial quotas; recreational bag limits; size limits; prohibited species; and bycatch reduction. Other issues such as, but not limited to, the commercial trip limits; quota allocations between directed, incidental, and

recreational permit holders; and season openings and closings will likely be addressed in future rulemakings.

**Table 1.1      Chronological List of Most of the Federal Register Publications Relating to Atlantic Sharks**

*Pre 1993*

|             |   |
|-------------|---|
| 48 FR 3371  | 01/25/83 Preliminary management plan with optimum yield and total allowable level of foreign fishing for sharks |
| 56 FR 20410 | 05/03/91 Notice of availability of draft FMP; 8 hearings  |
| 57 FR 1250  | 01/13/92 Notice of availability of Secretarial FMP  |
| 57 FR 24222 | 06/08/92 Proposed rule to implement FMP   |
| 57 FR 29859 | 07/07/92 Correction to 57 FR 24222  |

*1993*

|             |   |
|-------------|---|
| 58 FR 21931 | 04/26/93 Final rule and interim final rule implementing FMP |
| 58 FR 27336 | 05/07/93 Correction to 58 FR 21931                          |
| 58 FR 27482 | 05/10/93 LCS commercial fishery closure announcement        |
| 58 FR 40075 | 07/27/93 Adjusts 1993 quotas                                |
| 58 FR 40076 | 07/27/93 LCS commercial fishery closure announcement        |
| 58 FR 46153 | 09/01/93 Notice of 13 public scoping meetings               |
| 58 FR 46153 | 11/05/93 Extension of comment period for 58 FR 66153        |
| 58 FR 68556 | 12/28/93 Interim final rule implementing trip limits        |

*1994*

|             |   |
|-------------|---|
| 59 FR 3321  | 01/21/94 Extension of comment period for 58 FR 68556            |
| 59 FR 8457  | 02/22/94 Notice of control date for entry                       |
| 59 FR 25350 | 05/16/94 LCS commercial fishery closure announcement            |
| 59 FR 33450 | 06/29/94 Adjusts second semi-annual 1994 quota                  |
| 59 FR 38943 | 08/01/94 LCS commercial fishery closure announcement            |
| 59 FR 44644 | 08/30/94 Reopens LCS fishery with new closure date              |
| 59 FR 48847 | 09/23/94 Notice of public scoping meetings                      |
| 59 FR 51388 | 10/11/94 Rescission of LCS closure                              |
| 59 FR 52277 | 10/17/94 Notice of additional scoping meetings                  |
| 59 FR 52453 | 10/18/94 Final rule implementing interim final rule in 1993 FMP |
| 59 FR 55066 | 11/03/94 LCS commercial fishery closure announcement            |

*1995*

|             |   |
|-------------|---|
| 60 FR 2071  | 01/06/95 Proposed rule to adjust quotas   |
| 60 FR 21468 | 05/02/95 Final rule indefinitely establishes LCS quota at 1994 level                  |
| 60 FR 27042 | 05/22/95 LCS commercial fishery closure announcement                                  |
| 60 FR 30068 | 06/07/95 Announcement of Shark Operations Team meeting                                |
| 60 FR 37023 | 07/19/95 Adjusts second semi-annual 1995 quota  |
| 60 FR 38785 | 07/28/95 Advanced notice of proposed rulemaking (ANPR) - Options for Permit Moratoria |
| 60 FR 44824 | 08/29/95 Extension of ANPR comment period   |
| 60 FR 49235 | 09/22/95 LCS commercial fishery closure announcement                                  |
| 60 FR 61243 | 11/29/95 Announces Limited Access Workshop  |

*1996*

|             |   |
|-------------|---|
| 61 FR 21978 | 05/13/96 LCS commercial fishery closure announcement    |
| 61 FR 37721 | 07/19/96 Announcement of Shark Operations Team meeting. |
| 61 FR 39099 | 07/26/96 Adjusts second semi-annual 1996 quota          |
| 61 FR 43185 | 08/21/96 LCS commercial fishery closure announcement    |

|             |          |  |
|-------------|----------|--|
| 61 FR 67295 | 12/20/96 | Proposed rule to reduce Quotas/Bag Limits                                |
| 61 FR 68202 | 12/27/96 | Proposed rule to establish limited entry (Draft Amendment 1 to 1993 FMP) |

*1997*

|             |          |  |
|-------------|----------|--|
| 62 FR 724   | 01/06/97 | Notice of availability of Draft Amendment 1 to 1993 FMP                          |
| 62 FR 1705  | 01/13/97 | Notice of 11 public hearings for Amendment 1                                     |
| 62 FR 1872  | 01/14/97 | Extension of comment period and notice of 4 hearings for proposed rule on quotas |
| 62 FR 4239  | 01/29/97 | Extension of comment period for proposed rule on quotas                          |
| 62 FR 8679  | 02/26/97 | Extension of comment period for Amendment 1 to 1993 FMP                          |
| 62 FR 16647 | 04/07/97 | Final rule reducing quotas/bag limits  |
| 62 FR 16656 | 04/07/97 | LCS commercial fishery closure announcement                                      |
| 62 FR 26475 | 05/14/97 | Announcement of Shark Operations Team meeting                                    |
| 62 FR 26428 | 05/14/97 | Adjusts second semi-annual 1997 LCS quota  |
| 62 FR 27586 | 05/20/97 | Notice of Intent to prepare an supplemental environmental impact statement       |
| 62 FR 27703 | 05/21/97 | Technical Amendment regarding bag limits   |
| 62 FR 38942 | 07/21/97 | LCS commercial fishery closure announcement                                      |

*1998*

|             |          |   |
|-------------|----------|---|
| 63 FR 14837 | 03/27/98 | LCS commercial fishery closure announcement |
| 63 FR 29355 | 05/29/98 | Adjusts second semi-annual 1998 LCS quota   |
| 63 FR 41736 | 08/05/98 | LCS commercial fishery closure announcement |

*1999*

|             |          |  |
|-------------|----------|--|
| 64 FR 3154  | 01/20/99 | Proposed rule for HMS FMP  |
| 64 FR 14154 | 03/24/99 | LCS commercial fishery closure announcement                              |
| 64 FR 29090 | 05/28/99 | Final rule for HMS FMP   |
| 65 FR 30248 | 06/07/99 | Fishing season notification  |
| 64 FR 37883 | 07/14/99 | Fishing season change notification                                       |
| 64 FR 47713 | 09/01/99 | LCS fishery reopening  |
| 64 FR 52772 | 09/30/99 | Notice of Availability of outline for National Plan of Action for sharks |
| 64 FR 53949 | 10/05/99 | LCS closure postponement   |
| 64 FR 66114 | 11/24/99 | Fishing season notification  |

*2000*

|             |          |  |
|-------------|----------|--|
| 65 FR 16186 | 03/27/00 | Revised timeline for National Plan of Action for sharks                          |
| 65 FR 35855 | 06/06/00 | Fishing season notification and 2 <sup>nd</sup> semi-annual LCS quota adjustment |
| 65 FR 47986 | 08/04/00 | Notice of Availability of National Plan of Action for sharks                     |
| 65 FR 38440 | 06/21/00 | Implementation of prohibited species provisions and closure change               |
| 65 FR 75867 | 12/05/00 | Fishing season notification  |

*2001*

|             |          |   |
|-------------|----------|---|
| 66 FR 55    | 01/02/01 | Implementation of HMS FMP pelagic shark quotas  |
| 66 FR 10484 | 02/15/01 | Notice of availability of Final National Plan of Action for the Conservation and Management of Sharks |
| 66 FR 13441 | 03/06/01 | Emergency rule to implement settlement agreement  |
| 66 FR 33918 | 06/26/01 | Fishing season notification and 2 <sup>nd</sup> semi-annual LCS quota adjustment                      |
| 66 FR 34401 | 06/28/01 | Proposed rule to implement national finning ban   |
| 66 FR 46401 | 09/05/01 | LCS fishing season extension  |
| 66 FR 67118 | 12/28/01 | Emergency rule to implement measures based on results of peer review and fishing season notification  |

2002

|             |          |  |
|-------------|----------|--|
| 67 FR 6194  | 02/11/02 | Final rule implementing national shark finning ban   |
| 67 FR 8211  | 02/22/02 | Correction to fishing season notification 66 FR 67118  |
| 67 FR 30879 | 05/08/02 | Notice of availability of SCS stock assessment   |
| 67 FR 36858 | 05/28/02 | Notice of availability of LCS sensitivity document and announcement of stock evaluation workshop in June |
| 67 FR 37354 | 5/29/02  | Extension of emergency rule and fishing season announcement  |
| 67 FR 64098 | 10/17/02 | Notice of availability of LCS stock assessment and final meeting report                                  |
| 67 FR 69180 | 11/15/02 | Notice of intent to conduct and environmental impact assessment and amend the HMS FMP                    |
| 67 FR 72629 | 12/06/02 | Proposed rule regarding EFPs   |
| 67 FR 78990 | 12/27/02 | Emergency rule to implement measures based on stock assessments and fishing season notification          |

2003

|             |          |   |
|-------------|----------|---|
| 68 FR 1024  | 01/08/03 | Announcement of 4 public hearings on emergency rule                                       |
| 68 FR 1430  | 01/10/03 | Extension of comment period for proposed rule on EFPs                                     |
| 68 FR 3853  | 01/27/03 | Announcement of 7 scoping meetings and notice of availability of Issues and Options paper |
| 68 FR 31983 | 05/29/03 | Emergency rule extension and fishing season notification                                  |

**Table 1.2 List of Large Coastal Shark Seasons, 1993-2003.**

| <b>Year</b> | <b>Open dates</b>  | <b>Quota (mt dw)</b>                               |
|-------------|--|--|
| 1993        | Jan. 1 - May 15  | 1,218  |
|             | July 1 - July 31   | 875  |
| 1994        | Jan. 1 - May 17  | 1,285  |
|             | July 1 - Aug 10<br>Sept. 1 - Nov. 4                                      | 1,318  |
| 1995        | Jan. 1 - May 31  | 1,285  |
|             | July 1 - Sept. 30  | 968  |
| 1996        | Jan. 1 - May 17  | 1,285  |
|             | July 1 - Aug. 31   | 1,168  |
| 1997        | Jan. 1 - April 7   | 642  |
|             | July 1 - July 21   | 326  |
| 1998        | Jan. 1 - Mar. 31   | 642  |
|             | July 1 - Aug. 4  | 600  |
| 1999        | Jan. 1 - Mar. 31   | 642  |
|             | July 1 - July 28<br>Sept. 1 - Oct. 15                                    | 585  |
| 2000        | Jan. 1 - Mar. 31   | 642  |
|             | July 1 - Aug. 15   | 542  |
| 2001        | Jan. 1 - Mar. 24   | 642  |
|             | July 1 - Sept. 4   | 697  |
| 2002        | Jan. 1 - April 15  | 735.5  |
|             | July 1 - Sept. 15  | 655.5  |
| 2003        | Jan. 1 - April 15 (Ridgeback LCS)<br>Jan. 1 - May 15 (Non-ridgeback LCS) | 391.5 (Ridgeback LCS)<br>465.5 (Non-ridgeback LCS) |
|             | July 1 - Sept. 15 (All LCS)  | 424 (Ridgeback LCS)<br>498 (Non-ridgeback LCS)     |



**Table 1.3 NOAA Fisheries' Actions Taken to Comply with the Terms of the Court-approved Settlement Agreement with SOFA *et al.***

| Term of settlement agreement   | Result   |
|--|--|
| Independent review of the 1998 LCS stock assessment<br>(Paragraphs 3 (a) through (d), revised settlement agreement)  | In October 2001, Natural Resources Consultants Inc. provided NOAA Fisheries with four reviews. Three of the four reviews found that the scientific conclusions and scientific management recommendations contained in the 1998 LCS stock assessment were not based on scientifically reasonable uses of the appropriate fisheries stock assessment techniques and on the best available (at the time of the 1998 LCS stock assessment) biological and fishery information relating to LCS. |
| Maintain the 1997 LCS quotas, pending the completion of the independent review of the 1998 stock assessment. If the majority of the reviews find flaws in the stock assessment, maintain the 1997 LCS quotas pending rulemaking based on a new stock assessment.<br>(Paragraph 3(e), revised settlement agreement) | In March 2001, NOAA Fisheries issued an emergency rule maintaining the 1997 LCS quota levels pending the completion of the peer review (66 FR 13441, March 6, 2001).<br><br>In December 2001, NOAA Fisheries issued a second emergency rule maintaining the 1997 LCS quota levels pending the completion of a new stock assessment (66 FR 67118, December 28, 2001).   |
| Conduct a new LCS stock assessment and obtain a peer review of that stock assessment<br>(Paragraph 3(f), revised settlement agreement)   | At the end of September 2002, NOAA Fisheries completed a new LCS stock assessment (67 FR 64098, October 17, 2002).<br><br>NOAA Fisheries received the results of the completed peer review in December 2002. The results were generally positive (Appendix 1).   |
| Work with SOFA <i>et al.</i> to obtain historical fin data<br>(Paragraph 3(g))   | Plaintiffs' and Defendant's attorneys subpoenaed historic shark records from fish dealers in New York and San Francisco. No documents were obtained through the subpoenas and NOAA Fisheries is unaware of any other dealers that may have records.  |
| Maintain the 1997 SCS quotas pending the completion of a new stock assessment<br>(Paragraph 4)   | In the beginning of 2002, NOAA Fisheries completed a new SCS stock assessment (67 FR 30879, May 8, 2002).  |
| Take appropriate action to adjust the pelagic shark quotas to make them consistent with regulations in the HMS FMP<br>(Paragraph 5)  | NOAA Fisheries implemented the pelagic shark quotas in the HMS FMP on January 2, 2001 (66 FR 55).  |

**Table 1.4 List of Management Objectives in the HMS FMP.** These objectives are not listed in any particular order.

- To prevent or end overfishing of Atlantic tuna, swordfish, and sharks and adopt the precautionary approach to fishery management;
- To rebuild overfished fisheries in as short a time as possible and control all components of fishing mortality, both directed and incidental, so as to ensure the long-term sustainability of the stocks and promote stock recovery of the management unit to the level at which the maximum sustainable yield can be supported on a continuing basis;
- To minimize, to the extent practicable, economic displacement and other adverse impacts on fishing communities during the transition from overfished fisheries to healthy ones;
- To minimize, to the extent practicable, bycatch of living marine resources and the mortality of such bycatch that cannot be avoided in the fisheries for Atlantic tuna, swordfish, and sharks;
- To establish a foundation for international negotiation on conservation and management measures to rebuild overfished fisheries and to promote achievement of optimum yield for these species throughout their range, both within and beyond the exclusive economic zone. Optimum yield is the maximum sustainable yield from the fishery, reduced by any relevant social, economic, or ecological factors;
- To provide a framework, consistent with other applicable law, to take necessary action under ICCAT compliance recommendations;
- To provide the data necessary for assessing the fish stocks and managing the fisheries, including addressing inadequacies in current collection and ongoing collection of social, economic, and bycatch data about HMS fisheries;
- Consistent with other objectives of this FMP, to manage Atlantic HMS fisheries for continuing optimum yield so as to provide the greatest overall benefit to the Nation, particularly with respect to food production, providing recreational opportunities, preserving traditional fisheries, and taking into account the protection of marine ecosystems;
- To better coordinate domestic conservation and management of the fisheries for Atlantic tuna, swordfish, sharks, and billfish, considering the multispecies nature of many HMS fisheries, overlapping regional and individual participation, international management concerns, historical fishing patterns and participation, and other relevant factors;
- To simplify and streamline HMS management while actively seeking input from affected constituencies, the general public, and the HMS AP;
- To promote protection of areas identified as essential fish habitat for tuna, swordfish, and sharks;
- To reduce latent effort and overcapitalization in HMS commercial fisheries;
- To develop eligibility criteria for participation in the commercial shark and swordfish fisheries based on historical participation, including access for traditional swordfish handgear fishermen to participate fully as the stock recovers; and,
- To create a management system to make fleet capacity commensurate with resource status so as to achieve the dual goals of economic efficiency and biological conservation.<< Table of Contents will generate here >><< Table of Contents will generate here >>